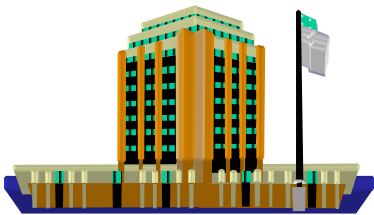# USASC&FG Information Technology and Digital Training Masterplan

Implementation Task Forces

Robert F. Helms II

6 August 2001

Simulations

- Information technology and signal tasks are well suited for the use of simulators for training

    - Most tasks can best be acquired via "learning by doing"

    - Heavily technical subjects that can be supported with PC based simulations

    - Tactics are relatively simple and do not require complex tactical simulations

- Simulators can be grouped into the general categories of technical and tactical

    - Technical simulators provide training on the operation and maintenance of systems and networks (*science*)

    - Tactical simulators provide training on the fighting of the systems and networks (*art*)

Common Use of Simulations

SIT
COTS

SLPD
Tactical
Simulators

Other
Locations

STT
Technical
Simulators
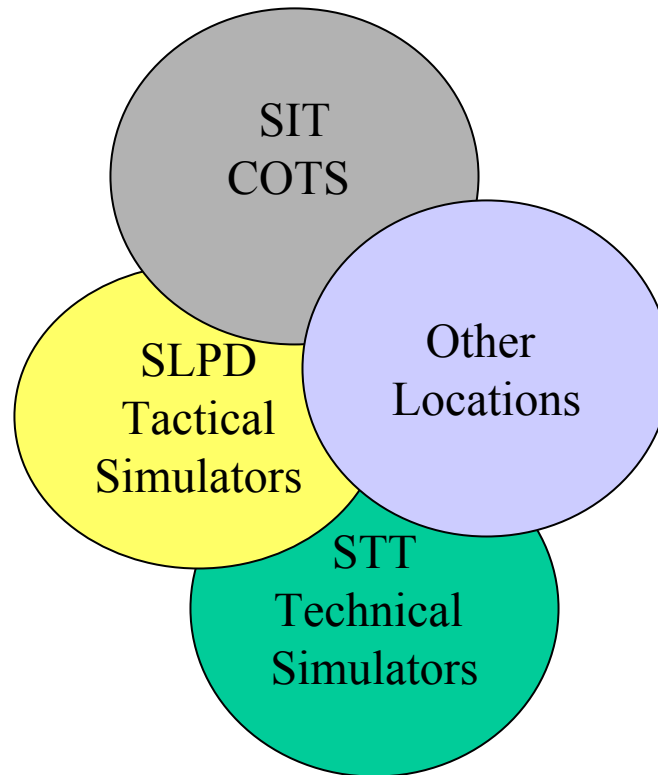
Other locations include remote campuses, units and individuals (active, reserve components, and civilians in the Army, other military services, joint components, and other nations) located away from Ft Gordon

Trainers and Simulations

Technical Trainers

- Echelons Below Corps Trainer
- Echelons Above Corps Trainer
- Integrated Digital System Trainer

Tactical Trainers

- Information Technology Fundamentals & Principles Tactical Trainer
- Information Technology Tactical Network Trainer
- Information Technology Tactical Adaptive Leader's Trainer
- Visual Terrain Environment Trainer
- Reconfigurable TOC Trainer

Technical Trainers

Technical Trainers	
Echelons Below Corps Trainer	**Echelons Above Corps Trainer**
AN/TTC-46	AN/TTC-56
AN/TTC-47	AN/TRC-138
AN/TTC-48	AN/TRC-170 (USAF only)
AN/TRC-190	AN/TRC-173
AN/TRC-191	AN/TRC-174
AN/TTC-50 (Ft. Bragg only)	AN/TRC-175
AN/TTC-51 (Ft Bragg only)	AN/TSC-85 & AN/TSC-93
AN/TTC-154 (SMART-T)	TD-1233, TD-1234, TD-1235 (Joint Training)
AN/TSC-156 (V) STAR-T (new system)	CV-4180 (Joint Training)
AN/VSQ-2C (V) 1 and AN/TSQ-158 (V) 4 (EPLRS System)	TTC-39D/PS/39D(V2) 2 Fundamentals
Integrated Digital Systems Trainer	
FBCB2	TAIS
MCS	SINCGARS/INC
CSS-CS	EPLRS Network Manager
ASAS	Network Manager Tool
AFATDS	TIMS
FAADC2 (AMDW/S)	ISYSCON
GCSS-A	RAPTOR

# Technical Trainers
(Additional)

- CHS Block 2 Assembly and Disassemble Simulation to train operators and leaders on computer components and functions

- Satellite and Transmission Principles Trainer for training principles to operators and leaders

Technical Trainers

Technical Trainers	
Trainer	**Purpose**
Information Technology Fundamentals & Principles Tactical Trainer	Train leaders in signal and information technology fundamental and principles
Information Technology Tactical Network Trainer	Train leaders to plan, establish, operate, protect and fight signal and information technology networks within the context of tactical scenarios
Information Technology Tactical Adaptive Leader Trainer	Train adaptive leaders in a range of tactical scenarios and situations; a computer generated leadership reaction course
Reconfigurable TOC Trainer	Train leaders on different TOC configurations with emphasis on signal and information technology systems and networks operating in a range of tactical TOC configurations
Visual Terrain Environment Trainer (immersive)	CAPSTONE exercises to validate leader skills to plan, establish, operate protect, and fight signal and information technology systems and networks in support of tactical operations

Implementation Task Force
Establishing Phase I Requirements for Simulators
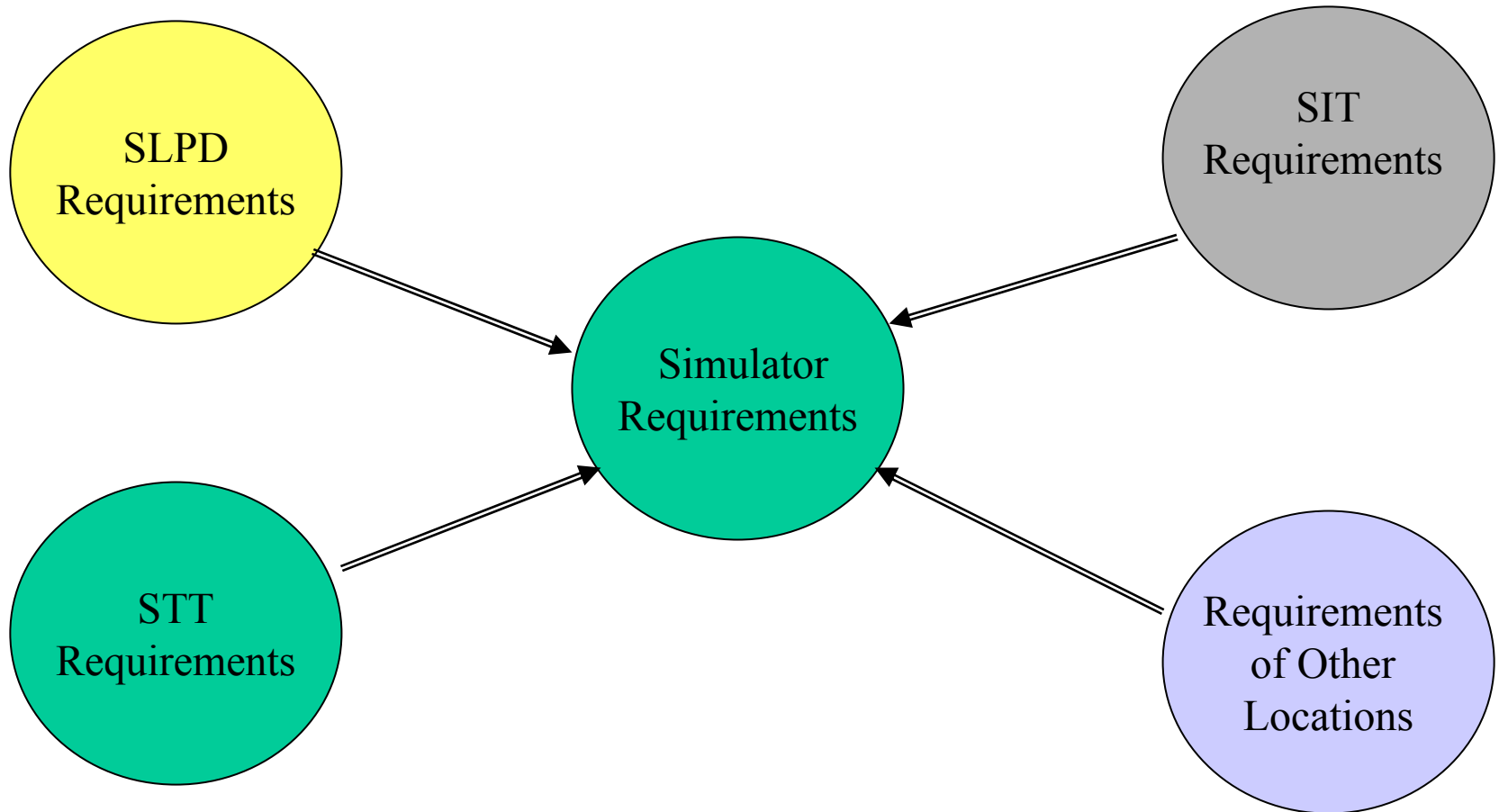
Trainers and Simulations
Key Points to Keep in Mind

- Trainers and simulations are being developed to support lifelong learning

- Being developed to support needs of the University, remote campuses, reserve components as well as signal units and individual soldiers and leaders

- Legacy systems are going to be part of the community for a long time and training has to be provided for these as well as the new systems

Implementation Task Force
Guidelines for Establishing Phase I Simulation Requirements

- Focus on what is required/needed; not what is possible

  - Understand/accept it is not possible to train for everything

  - Expect/accept need for priorities and trade-offs

- Avoid proprietary software; specify COTS

- Design the simulation to support:

  - Different MOSs

  - Growth

- Target PC based platform(s) available at the university and other locations

  - Multiple applications on same platforms

  - Make trade-offs when necessary

- Identify fundamental and principles

Implementation Task Force
Guidelines for Establishing Phase I Simulation Requirements

- Establish and reuse a common architecture across the trainers and the associated families of simulations; e.g.,

  - Instructor Operating Station

  - Fault insertion

  - Student tracking and record/AAR

  - Screen menu

  - Man-machine interface

- Establish and enforce quantifiable requirements to be used as "exit criteria" for simulation development

  - Avoid requirement "creep"

- Establish complementary relationship between simulations, CBT/IMI, PTTs, HOTs, and actual equipment

Criteria for Trainers and Simulations

Implementation Task Forces for Technical and Tactical Trainers should use an established set of criteria for defining and recommending these trainers and simulations; examples of criterion include:

- Supports training for multiple MOSs

- Can be supported on PC platforms

- Is COTS based

- Supports growth

- Can be used at other locations

- Is consistent with a common architecture

- Complements other training materials (CBT/IMI, PTTs. HOTs, actual equipment)

- Development, article, and life cycle costs

Implementation Task Force
Training Triangle

Validate Skills

Practice Skills

Acquire Skills

Familiarize

Live

Constructive

Virtual

Traditional Methods
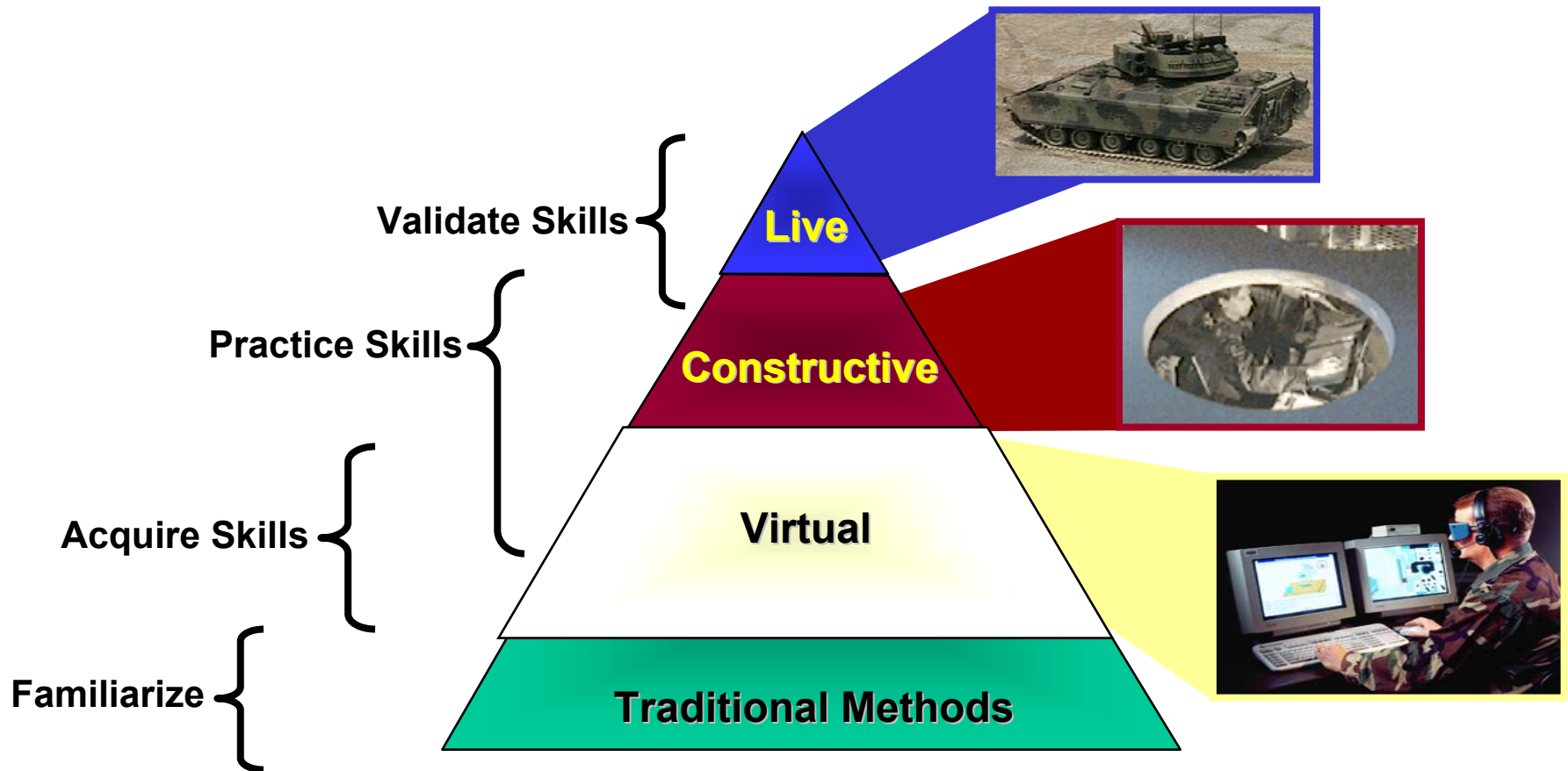
Simulation Training Requirements Integration Matrix
(Phase I)

Trainer: Echelon Above Corps		Simulation: AN/TSC-85 & AN/TSC-93					UIT POC/Lead: Mr. John Doe (xxx-xxxx; e-mail)	
College	MOS	Task Being Trained	Role	P Level	K Level	FAPV Level	Principles Being Trained	Fundamentals Being Trained
STT	31S-10	Install Satellite Communications Terminal AN/TSC-85B(V) & AN/TSC-93B(V)	P	2	B	F,A,P,v		

Delivery Method & Location	Certification	Operating Modes	Learning Environment	Simulation Design	ROM

Echelon Below Corps Trainer

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Direct Support Maintainer	Level of Complexity
Echelon Below Corps Trainer ROM ($10.8 M)							
AN/TTC-47	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-46	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-48	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TRC-190	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TRC-191	F,A,p,v		f	f	F,A,P,v	F,A,P,v	3
AN/TTC-51 (Ft. Bragg)			f	f			
AN/TTC-50 (Ft. Bragg)			f	f			
AN/TSC-154 SMART-T	F,A,p,v		F	F	F,A,P,v	F,A,P,v	3
AN/TSC-156 (V)* START-T	F,A,p,v		F	F	F,A,P,v	F,A,P,v	3
AN/VSQ-2C(V)1 and AN/TSQ-158 (V)4. (EPLRS System)	F,A,p,v		f	f	F,A,P,v	F,A,P,v	2

Echelon Above Corps Trainer

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Direct Support Maintainer	Level of Complexity
Echelon Above Corps Trainer (RCM \$16M)							
AN/TRG-173	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
AN/TRG-174	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
AN/TRG-175	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
AN/TRG-138	F,A,p,v		f	f	F,A,P,v	F,A,P,v	4
AN/TRG-170 (USAF)			f	f			
AN/TSG-85	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4
AN/TSG-93	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4
AN/TTG-56	F,A,p,v		F	F	F,A,p,v	F,A,p,v	4
TD-1233, TD-1234, TD-1235			f	f			
CV-4180			f	f			
TTG-39D/PS-39D(V)2	F,A,p,v		f	f	F,A,p,v	F,A,p,v	4

Integrated Digital System Trainer

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Direct Support Maintainer	Level of Complexity
Integrated Digital System Trainer (ROM: $2.66 M)							
MCS		F,A,p,v	F	F			**1**
MCS Light		F,A,p,v	F	F			**1**
ASAS		F,A,p,v	F	F			**1**
AFATDS		F,A,p,v	F	F			**1**
FAADC2 (AMDW/S)		F,A,p,v	F	F			**1**
FBCB2		F,A,p,v	F	F	F,A,p,v		**2**
GCSS-A		F,A,p,v	F	F			**1**
TAIS		F,A,p,v	F	F			**1**
CSSCS		F,A,p,v	F	F			**1**
SINCGARS		F,A,p,v	F	F	F,A,p,v		**2**
EPLRS Network Manager	F,A,p,v			F,A,p,v	F,A,p,v		**2**
Network Management Tool	F,A,p,v			F,A,p,v	F,A,p,v		**2**
TIMS	F,A,p,v			F,A,p,v	F,A,p,v		**2**
ISYSCON	F,A,p,v			F,A,p,v	F,A,p,v		**2**
RAPTOR	F,A,p,v			F,A,p,v			**2**

Other Trainers

	Primary Operator & User	Secondary Operator	Supervisor	Planner & Manager	Organizational Maintainer	Direct Support Maintainer	Level of Complexity	
Other Trainers								
Satellite and Telecommunications Principles Trainer	F,A,p,v				F,A,p,v	F,A,p,v	4	ROM $4-7M
CHS-2 Computer Assembly and Disassembly Trainer			f	f	F,A,p,V	F,A,p,V	2	ROM $300K

Tactical Trainers

Tactical Trainers			
Trainer	**Purpose**	**Complexity**	**ROM $2.7M**
Information Technology Fundamentals & Principles Tactical Trainer	Train leaders in signal and information technology fundamental and principles	**2**	
Information Technology Tactical Network Trainer	Train leaders to plan, establish, operate, protect and fight signal and information technology networks within the context of tactical scenarios	2	
Information Technology Tactical Adaptive Leader Trainer	Train adaptive leaders in a range of tactical scenarios and situations; a computer generated leadership reaction course	2	
Reconfigurable TOC Trainer	Train leaders on different TOC configurations with emphasis on signal and information technology systems and networks operating in a range of tactical TOC configurations	3	
Visual Terrain Environment Trainer (immersive)	CAPSTONE exercises to validate leader skills to plan, establish, operate protect, and fight signal and information technology systems and networks in support of tactical operations	2	

Tactical Simulations

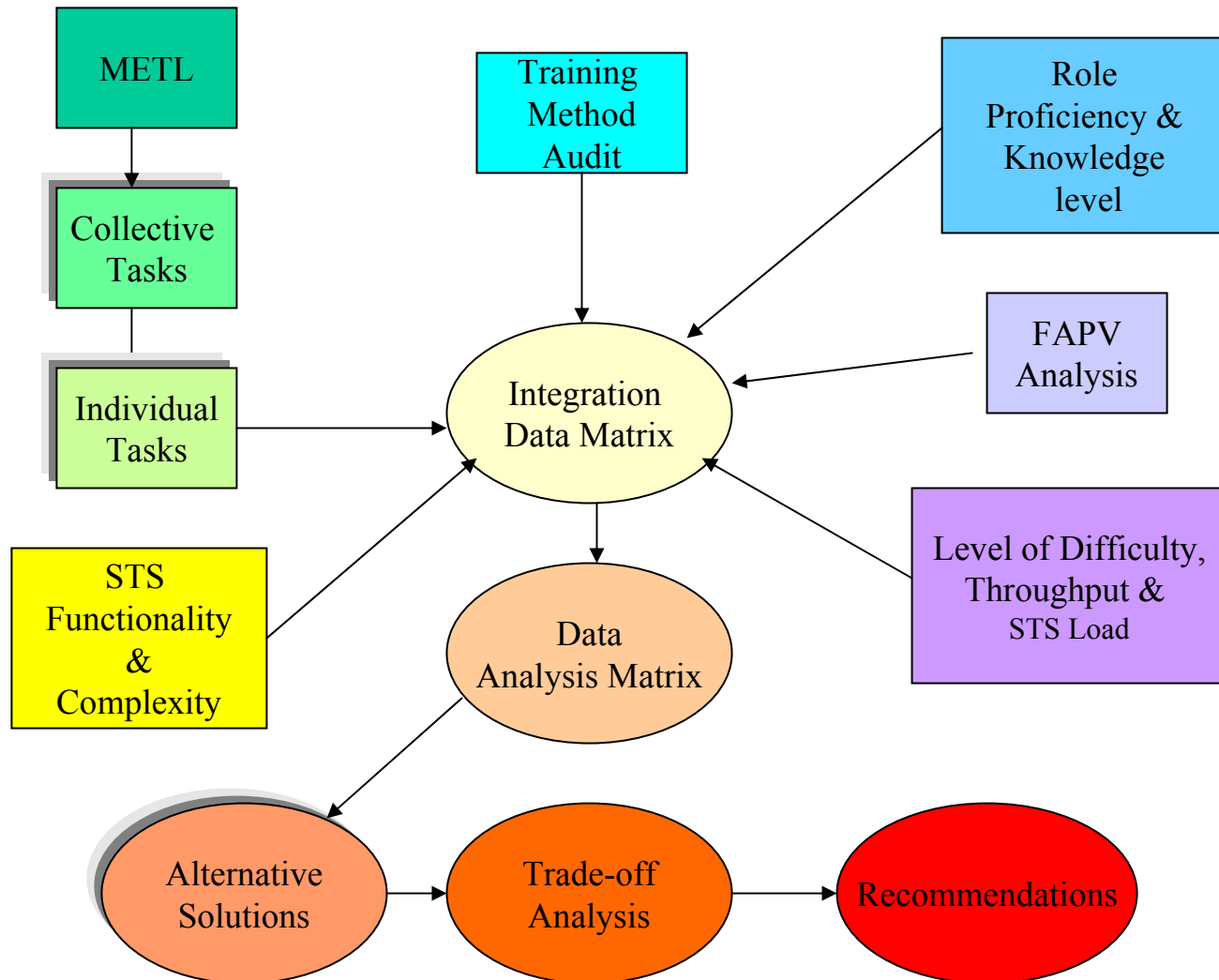| Trainer/Course	Fundamentals & Principles Tactical Trainer	Information Technology Tactical Network Trainer	Tactical Leader's Trainer	Visual Terrain Environment Trainer	Reconfigurable TOC Trainer
Network Fundamentals		■		■	
Transmission Fundamentals	■			■	
Joint/EAC Communications	■		■		■
EBC Signal Operations		■	■		■
Network Planning and Management Fundamentals		■	■	■	
ISYSCON Fundamentals		■			
TOC Simulation		■			■
S-6 Fundamentals	■				■
S-6 TOC					■
SIGNAL PLATOON LEADER FUNDANMENTALS	■		■	■	
Tactical FTX		■	■	■	■
Signal FTX			■	■	■
SIPRNET, NIPRNET, and NES Fundamentals	■	■			
TACTICAL DEFENSE MESSAGE SYSTEM (DMS/TMS) Fundamentals	■				
DGM, MULTICHANNEL AND TECHNICAL CONTROL Fundamentals	■	■			
MOBILE SUBSCRIBER EQUIPMENT (MSE) Fundamentals	■	■		■	

Pilot

Recommend pilot(s) to demonstrate the use of interactive PC based simulations to support "lifelong learning by doing"

- Technical simulation
- Tactical simulation

Backup Slides

Implementation Task Force - Phase II
Integrated Training System Model

METL

Collective Tasks

Individual Tasks

Training Method Audit

Role Proficiency & Knowledge level

FAPV Analysis

Integration Data Matrix

STS Functionality & Complexity

Data Analysis Matrix

Level of Difficulty, Throughput & STS Load

Alternative Solutions

Trade-off Analysis

Recommendations

Implementation Task Force - Phase II
Integration Data Matrix

Task: Install Satellite Communications Terminal AN/TSC-85B(V) & AN/TSC-93B(V)									
31S-10			**Traditional**	**CBT/IMI**	**Tech Sim**	**Tac Sim**	**PTT**	**HOTS**	**Equipment**
Level 1 Audit			2	2	0	N	N	0	3
Role	P								
Proficiency Level	2		`						
Knowledge Level	B								
FAPV Level			F	F,A	P,V			A,P	V
Level of Difficulty			2	1	0.9	0	0	1.1	1.1
Students per Year			461	461	461	0	0	461	461
STS Load			77	461	207	0	0	254	254
ROM									

Simulation Funding Strategies

- Pursue funding for technical and tactical trainers that include an associated family of simulations

- Work with PMs to have simulations developed and delivered to support training vice actual pieces of equipment
  - Target having the simulations available for training before equipment is fielded

- Trade off funds programmed for traditional training materials, devices, and/or equipment for simulations

- Leverage high priority funded Army and joint programs

- Identify and use simulations available at other locations
  - Particularly tactical simulations and databases

- Obtain buy-in and support of field units and other organizations